Determination of Potential Agricultural Conservation Savings (Low End of Range)

Westside San Joaquin River

Input Data from DWR

Applied Water	1,361	(1,000 af)
Depletion	1,041	(1,000 af)
ET of Applied Water	973	(1,000 af)

Assumptions for Calculations

1. Ave. Leaching Fraction = 14%

2. % lost to Channel Evap/ET [3] = 4%

3. Assumed allocation of conservation betw District and On-farm
district portion = 1/3 of savings * "adjustment factor"

canal lining:	1	
tailwater:	1	(adjustment factor
flexibility:	1.5	based on region variation
meas/price:	1	in water districts)
	4.5	(points for this region's districts of 4 points for average)
	1.125	**= adjustment factor**
	37%	= district portion
	63%	= on-farm portion

Calculations from Input Data

	(1,000 af)	
Total Existing Losses	**388**	(Diff betw. Applied Water and ETAW)
Total Irrecoverable losses	**68**	(Diff betw. Depletion and ETAW)
Total Recoverable losses	**320**	(Diff betw. Applied Water and Depletion)
Ratio of Irrecoverable Loss	18%	(Irrecov divided by total existing losses)
Portion lost to leaching	24	(Leach Fraction * ETAW * Irrec. Loss Ratio * Adj. Factor)
Portion lost to Channel Evap/ET	54	(Applied Water * % lost to Channel Evap/ET)
Total Loss Conservation Potential	310	(Total Existing loss - portion to leaching - portion to channel evap/ET)
Irrecoverable Portion	**0**	(Irrec loss - portion to leaching - portion lost to channel evap/ET)
Recoverable Portion	**310**	(Total Existing loss - Irrecoverable Loss Portion)

Incremental Distribution of Conservable Portion of Losses

		Distrib. Factor	Applied Water Reduction [1] (1,000 ac-ft)	Irrec. Loss Reduction [2] (1,000 ac-ft)	Rec. Loss Reduction (1,000 ac-ft)
No Action Increment =	1st 40%	0.40	124	0	124
CALFED Increment =	next 30%	0.30	93	0	93
Remaining =	final 30%	0.30	93	0	93
			310	0	310

Summary of Savings:

Existing Applied Water Use = 1,361

Total Potential Reduction of Application

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	77	58	135
District	--	46	35	81
Total	388	124	93	217

Recovered Losses with Potential for Rerouting Flows

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	77	58	135
District	--	46	35	81
Total	320	124	93	217

Potential for Recovering Currently Irrecoverable Losses

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	0	0	0
District	--	0	0	0
Total	68	0	0	0

Notes:
1. Calculated as the distribution factor times the "conservable portion" of the total existing loss. The first 40% of savings potential occurs under *No Action*. The next 30% of saving potential is the CALFED increment. The final 30% is considered "non-conservable".
2. Calculated as the distribution factor times the "conservable portion" of irrecoverable loss. The first 40% of savings potential occurs under No Action. The next 30% of saving potential is the CALFED increment. The final 30% is considered "non-conservable".
3. Derived from comparing consumptive conveyance loss values from USBR *Least-Cost CVP Yield Increase Plan*, T.A #3 (Sept. 1995) to applied water values for the region. A range of 2 to 4% was used to account for uncertainty. This value accounts for consumption by bank and riparian vegetation and channel evaporation.

Determination of Potential Agricultural Conservation Savings (High End of Range)
Westside San Joaquin River

Input Data from DWR

Applied Water	1,361	(1,000 af)
Depletion	1,041	(1,000 af)
ET of Applied Water	973	(1,000 af)

Assumptions for Calculations

1. Ave. Leaching Fraction = 10%

2. % lost to Channel Evap/ET [3] = 2%

3. Assumed allocation of conservation betw District and On-farm
district portion = 1/3 of savings * "adjustment factor"

canal lining:	1	
tailwater:	1	(adjustment factor
flexibility:	1.5	based on region variation
meas/price:	1	in water districts)
	4.5	(points for this region's districts of 4 points for average)
	1.125	**= adjustment factor**
	37%	= district portion
	63%	= on-farm portion

Calculations from Input Data

	(1,000 af)	
Total Existing Losses	**388**	(Diff betw. Applied Water and ETAW)
Total Irrecoverable losses	**68**	(Diff betw. Depletion and ETAW)
Total Recoverable losses	**320**	(Diff betw. Applied Water and Depletion)
Ratio of Irrecoverable Loss	18%	(Irrecov divided by total existing losses)
Portion lost to leaching	17	(Leach Fraction * ETAW * Irrec. Loss Ratio * Adj. Factor)
Portion lost to Channel Evap/ET	27	(Applied Water * % lost to Channel Evap/ET)
Total Loss Conservation Potential	344	(Total Existing loss - portion to leaching - portion to channel evap/ET)
Irrecoverable Portion	**24**	(Irrec loss - portion to leaching - portion lost to channel evap/ET)
Recoverable Portion	**320**	(Total Existing loss - Irrecoverable Loss Portion)

Incremental Distribution of Conservable Portion of Losses

		Distrib. Factor	Applied Water Reduction [1] (1,000 ac-ft)	Irrec. Loss Reduction [2] (1,000 ac-ft)	Rec. Loss Reduction (1,000 ac-ft)
No Action Increment =	1st 40%	0.40	137	9	128
CALFED Increment =	next 30%	0.30	103	7	96
Remaining =	final 30%	0.30	103	7	96
			344	24	320

Summary of Savings:

Existing Applied Water Use = 1,361

Total Potential Reduction of Application

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	86	64	150
District	--	52	39	91
Total	388	137	103	241

Recovered Losses with Potential for Rerouting Flows

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	80	60	140
District	--	48	36	84
Total	320	128	96	224

Potential for Recovering Currently Irrecoverable Losses

(1,000af)	Existing	No Action	CALFED	Total
On-Farm	--	6	4	10
District	--	4	3	7
Total	68	9	7	17

Notes:
1. Calculated as the distribution factor times the "conservable portion" of the total existing loss. The first 40% of savings potential occurs under *No Action*. The next 30% of saving potential is the CALFED increment. The final 30% is considered "non-conservable".
2. Calculated as the distribution factor times the "conservable portion" of irrecoverable loss. The first 40% of savings potential occurs under No Action. The next 30% of saving potential is the CALFED increment. The final 30% is considered "non-conservable".
3. Derived from comparing consumptive conveyance loss values from USBR *Least-Cost CVP Yield Increase Plan*, T.A #3 (Sept. 1995) to applied water values for the region. A range of 2 to 4% was used to account for uncertainty. This value accounts for consumption by bank and riparian vegetation and channel evaporation.